LISTING OF THE CLAIMS

We Claim:

1. (Currently amended) An implantable stimulation electrode for use with an implantable tissue stimulator~~, particularly~~ selected from the group consisting of a pacemaker, a defibrillator, a bone stimulator, ~~or~~ and a neurostimulator, the stimulation electrode comprising a metallic base body ~~optionally one or more intermediate layers applied to the base body,~~ and a coating, which covers the base body ~~and optionally the intermediate layers,~~ to increase the tissue compatibility,

   wherein the coating comprises a polysaccharide layer made of hyaluronic acid and/or hyaluronic acid derivatives applied directly to the base body.

2. (Previously presented) The stimulation electrode according to claim 1,

   wherein the hyaluronic acid and hyaluronic acid derivatives have an average molecular weight between 300,000 and 500,000 Dalton after a sterilization.

3. (Previously presented) The stimulation electrode according to claim 2,

   wherein the average molecular weight is between 380,000 and 420,000 Dalton.

4. (Previously presented) The stimulation electrode according to claim 1,

   wherein the polysaccharide layer has a composition such that the in vivo degradation of the polysaccharide layer is slowed from the outside in the direction of the base body of the stimulation electrode.

5. (Previously presented) The stimulation electrode according to claim 4,

   wherein an internal area of the polysaccharide layer is not degradable, at least not completely, within two years.

6. (Previously presented) The stimulation electrode according to claim 5,

wherein the internal area is 3 to 50 μm thick.

7. (Previously presented) The stimulation electrode according to claim 4,

wherein an external area of the polysaccharide layer is degradable in vivo within 100 days.

8. (Previously presented) The stimulation electrode according to claim 7,

wherein the external area is 10 to 250 μm thick.

9. (Previously presented) The stimulation electrode according to claim 4,

wherein the polysaccharide layer comprises at least two partial layers having different degradation behaviors, the degradation behavior within each partial layer being able to be fixed continuously changeably or constant over the partial layer.

10. (Previously presented) The stimulation electrode according to claim 9,

wherein the polysaccharide layer comprises an internal partial layer which is degradable by not more than 20 weight-percent in vivo within 2 years.

11. (Previously presented) The stimulation electrode according to claim 10,

wherein the internal partial layer is 3 to 50 μm thick.

12. (Previously presented) The stimulation electrode according to claim 9,

wherein the polysaccharide layer comprises an external partial layer which is degradable by at least more than 50 weight-percent within 100 days in vivo.

13. (Previously presented) The stimulation electrode according to claim 12,

wherein the external partial layer is 10 to 250 μm thick.

14. (Previously presented) The stimulation electrode according to claim 4,

wherein a layer thickness of the coating is between 10-400 μm.

15. (Previously presented) The stimulation electrode according to claim 14,

wherein the layer thickness is 50-120 μm.

16. (Previously presented) The stimulation electrode according to claim 1,

wherein the coating contains dexamethasone and/or dexamethasone sodium phosphate (DMNP) in a concentration sufficient to produce a pharmacological effect.

17. (Previously presented) The stimulation electrode according to claim 1,

wherein the hyaluronic acid or hyaluronic acid derivatives are components of the coating as individual substances, copolymers or block polymers made of hyaluronic acid and hyaluronic acid derivatives, or mixtures thereof.

18. (Previously presented) The stimulation electrode according to claim 1,

wherein the polysaccharide layer is immobilized covalently or through physisorption on the surface of the stimulation electrode.

19. (Previously presented) The stimulation electrode according to claim 1,

wherein the polysaccharide layer comprises an adhesion-promoting layer made of chitosan.

20. (Previously presented) The stimulation electrode according to claim 19,

wherein the adhesion-promoting layer is 0.1 to 50 μm thick.

21. (Previously presented) The stimulation electrode according to claim 1,

wherein the polysaccharide layer contains chitosan at least in partial areas or partial layers.

22. (Previously presented) The stimulation electrode according to claim 21,

wherein a component of the chitosan in the total weight of the polysaccharide layer is not more than 50 weight-percent.

23. (New) An implantable stimulation electrode for use with an implantable tissue stimulator selected from the group consisting of a pacemaker, a defibrillator, a bone stimulator, and a neurostimulator, the stimulation electrode comprising a metallic base body, one or more chitosan-containing intermediate layers applied to the base body, and a coating, which covers the base body and the intermediate layers, to increase the tissue compatibility,

wherein the coating comprises a polysaccharide layer made of hyaluronic acid and/or hyaluronic acid derivatives.